

THE ENDOSCOPIC DIAGNOSIS OF CELIAC DISEASE : A DIFFICULT CLUE

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Absence or reduction of duodenal folds, scalloped folds, mosaic and hypotrophic aspect of duodenal mucosa, observable on endoscopic examination are considered typical of celiac disease (CD).

The aim of this study was to evaluate in celiac patients, the sensitivity and the specificity with negative (npv) and positive predictive value (ppv) of these signs. Forty-one consecutive patients, with symptoms suggestive of CD with serum antiendomysial antibodies positivity (EMAs+), were submitted to esophagogastroduodenoscopy (EGDS). Twenty-two subjects EMA negative, submitted to EGDS for esophagitis and ulcer disease, were used as control group. In each patient 5 biopsies were performed; three specimens were used for histological examination and two were cultured (1). Briefly: biopsy samples were cultured in medium with and without gliadin, EMA were detected in culture supernatants by means of IFA.

RESULTS :

Endoscopic Signs	Histology				In vitro culture			
	Sens	Spec	ppv	npv	Sens	Spec	ppv	npv
Folds	55%	91%	84%	70%	44%	91%	90%	47%
Mosaic aspect	17%	100%	100%	59%	12%	100%	100%	38%
Scalloped folds	7%	97%	67%	55%	7%	100%	100%	37%
Hypotrophic Aspect	52%	65%	56%	61%	49%	64%	71%	40%

The high values of specificity and ppv suggest that reduction or absence of folds, the scalloped folds and the mosaic aspect are characteristic of CD. Whereas the low values of sensibility and npv suggest that absence cannot exclude CD. Therefore we recommend to perform duodenal biopsies in patients with symptoms suggestive of CD and/or EMAs+.

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THE CLINICAL EFFECTIVENESS OF THE ULTRAFLEX SELF-EXPANDING STENT IN MALIGNANT OESOPHAGEAL OBSTRUCTION.

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BACKGROUND AND AIMS.

Esophageal cancer invasion is associated with a poor prognosis and the palliative relief of the obstruction is often the only goal for the patient. We report our experience with endoscopic esophageal prosthesis in the treatment of 21 patients with advanced malignant esophageal stenosis.

PATIENTS AND METHOD.

The cause of the stenosis was an esophageal or esophagogastric cancer in 12 cases, a bronchogenic cancer in 7 patients; 2 patients had a mesotelioma. In 4 cases a tracheo-esophageal fistula was also present, 2 patients had an anastomotic esophago-gastric recurrent stricture. The mean dysphagia score prior to stenting was 4.

A self-expanding metal prosthesis (Ultraflex, Microvasive-Boston Scientific Corp.) was used in all patients: in 7 of them a covered model was inserted. All the procedures were accomplished after mild sedation and under combined endoscopic and fluoroscopic guidance; when necessary previous TTS balloon dilation was performed.

RESULTS

There was no technical failure in the insertion of the prosthesis.

No short-term serious complications were seen, and 19 patients tolerated the procedure well. Only 2 patients (4,2%) experienced chest pain that required appropriate long-term analgesia. In no cases was the chest pain due to perforation.

The mean dysphagia score improved to 1 after stenting.

Median follow-up was 4 months (2-8). No prosthesis displacement was observed. Endoscopic re-intervention was required in 4 patients: in 1 case a solid meal bolus was removed, in 2 cases a tumour overgrowth was resected, in 1 patient a second prosthesis was inserted proximally.

CONCLUSIONS

In our experience the use of self-expanding esophageal stent seems to offer a safe, fast and effective palliation of the malignant esophageal obstruction in every situation except in the very high stenosis.

Experimental and Microsurgery

ADCON - TN™ IN COMPLEX TENDON AND NERVE SURGERY AT THE UPPER LIMB.

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Adcon-TN (Anti-adhesion barrier gel) is bioabsorbable gel composed of polyglycan ester in phosphate buffered saline solution. For its chemical anti-adhesion properties has recently been introduced in complex surgical procedures on nerves and tendons which are often effected by postoperative adhesion and fibrotic phenomena. Recent experimental and clinical trials showed a significant reduction in postoperative perineural and peritendinous fibrosis, with a consequent outcome improvement.

The present study is aimed to evaluate the effectiveness of this product in the prevention of peritendinous and perineural fibrosis and scarring after tenolysis, tendon transfers and neurolysis procedures in hand surgery. Between 1996 and 1998, 9 patients underwent Adcon-TN application after complex tendon and/or nerve surgical procedures in the upper limb.

In 3 cases a neurolysis for carpal tunnel syndrome recurrence was performed, 4 patients underwent external neurolysis for post-traumatic neuropathies (2 cases of ulnar neurolysis at the elbow, 1 case of ulnar nerve neurolysis at the wrist, 1 case of median nerve neurolysis at the forearm); 1 patient affected by extramedullary plasmocytoma underwent a median nerve external neurolysis; a tendon transfer was performed in tetraplegic patient.

Mean follow-up period is 10 months (Max. 20-Min 6 months). In all the treated patients subjective and objective symptoms improved with good pain relief but poor sensibility recovery.

This is a preliminary study: a statistical analysis of outcome is not possible. No adverse phenomena were observed. The use of a barrier gel in tendon and nerve surgery, along with accurate surgical technique and use of adequate pre and post-operative care protocols, is an interesting and promising method in the prevention of adhesions. The physiopathology of this action is not well known but apparently this gel, allowing a normal neo-angiogenesis, is able to reduce fibroblast migration and deposition of type III collagen.

Further studies with longer follow up and larger series should be carried out to confirm the effectiveness of this product.

PRESENT ROLE OF MICROSURGERY IN THE CONSERVATIVE COMBINED TREATMENT OF SECONDARY LYMPHEDEMA.

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Introduction: Microsurgery in managing peripheral lymphedema allowed to move from the *debulking* traditional surgery, which aimed at treating effects of the disease, towards a *functional* therapy, with the cure of lymph stasis by the therapy directly of the same cause of lymphedema, performing lympho-venous derivative or reconstructive (interpositioned vein graft) microsurgical methods.

Methods: The role of Lymphatic Microsurgery in relation to medical and physical treatment is particularly pointed out. The two methods must not be considered antitetic, but advantageously complementary, in order to obtain better results, stable with time, and to decrease social and sanitary costs.

Results: The positive clinical outcome of our School wide clinical experience (843 patients, in 25 years of activity in this field) were assessed both clinically (limb circumferences and edema volume) and instrumentally by lymphangioscintigraphy, which allowed to demonstrate the patency of anastomoses at medium and long term after microsurgical operation (even at over 10 years from Microsurgery).

Discussion and conclusions: An accurate diagnostic study is very important to select patients candidate for Microsurgery. The more precocious the repair of lymphatic pathways is, when there is a block, the better results can be reached.

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Role of IL-2 in an experimental model of sepsis

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Introduction : some investigations have demonstrated that TNF and IL-6 can explain adverse effect and death in sepsis. Recent studies, on the contrary, demonstrate an impairment in immunity after a septic insult. Immuno-modulation seems to open a new *scenario* in the treatment in sepsis. **Aim :** the aim of this study was to ascertain whether or not IL-2 may decrease mortality in an experimental model of peritonitis in rats obtained with cecal ligation and puncture, CLP. **Material and methods:** we studied three groups of fifteen Sprague- Dawley male rats (250 gr.). Group A was control group (CLP). Group B underwent CLP and postoperative antibiotic therapy with tobramycin and clindamycin (3ng/g/die and 40ng/g/die respective, until 72nd postoperative hour). Group C underwent IL-2 intraperitoneally preoperative injection (1000000 IU), then CLP, and postoperative antibiotic therapy with same modality. Mortality was monitored within 72 hours after CLP. Serum TNF and IL-6 was also evaluated. **Results:** group A (sepsis without antibiotic therapy), after CLP, had mortality of 80%. Group C (IL-

2 pretreated) had a mortality of 33% that was significantly lower (70%) than in group B (only antibiotic therapy). Serum IL-6 was undetectable in all groups (<0.1pg/ml). Therefore, there was no statistical difference in serum TNF and IL-6 levels in groups A,B,C. **Conclusions:** our results suggests that IL-2 plays a protective role against sepsis in rats after CLP. Furthermore we can demonstrate that TNF and IL-6, usually considered as an activation index of monocyte macrophage response, are not involved in the pathogenesis of sepsis outcome.

PARTIAL VERSUS TOTAL PORTACAVAL SHUNT IN THE EXPERIMENTAL MODEL. EVALUATION OF THE IMMEDIATE INTRAOPERATIVE CHANGES.

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Many studies have attempted to utilize intraoperative hemodynamic and metabolic parameters to predict morbidity and mortality in patients undergoing portal-systemic shunts. The aim of this experimental study is to correlate immediate intraoperative changes with partial and total decompression of the portal system. **Materials and Methods:** 16 Landrace female pigs (20-24 Kg.) were used for experiments between May 1998 and January 1999. The animals were fasted overnight before surgical procedures, and operations were carried out under sterile conditions. Anesthesia was induced with Ketamina/Xylazine and maintained with Isoflurane, O₂ and N₂O. A catheter was inserted into the exposed external and internal jugular veins and was used for blood sampling and fluid infusion. The common carotid artery was likewise cannulated to blood pressure monitoring. The animals were divided into two groups. **Group A:** 8 animals underwent to side to side portacaval shunt and **Group B:** 8 animals underwent to portacaval H-shunts with interposition of 8 mm H graft of polytetrafluoroethylene (PTFE). In both groups, the abdomen was opened along midline. The liver was mobilized by transection of all peritoneal adhesions. In **Group A:** a side to side portacaval shunt was constructed at level of the outflow of the right renal vein and at the level of the confluence of the splenic with the superior mesenteric vein; in **Group B:** a portacaval shunt was achieved using a 8 mm graft in PTFE positioned at the same level of the simple portacaval shunt of the previous group. At the end of the last anastomosis, Intraoperative Doppler Ultrasound (IDU) and an angiogram were performed in both groups and 30 minutes later blood samples were drawn for arterial emogas analysis and for evaluation of total bilirubin and lactates. Mean blood arterial pressure (MAP), heart rate (HR) and pH were collected at the end of the performance of the shunt. **Results:** IDU and angiogram showed the patency of all the shunts in both groups. The following values represents the average of the obtained values. MAP (**Group A:** 110/80 mm/hg; **Group B:** 90/70 mm/hg). HR (**Group A:** 120 b/m; **Group B:** 160 b/m). PH (**Group A:** 7.51; **Group B:** 7.46). Total bilirubin (**Group A:** 0,5 mg/dl; **Group B:** 0,3 mg/dl). Lactates (**Group A:** 966 U/I; **Group B:** 934 U/I). **Conclusions:** Intraoperative data have been utilized by others to provide some practical benefit in distinguish a patient as ideal candidate for total or partial or selective shunt; as confirmed in this experimental study direct vein to vein anastomosis do not reduce sufficiently the diameter of the shunt, but 8mm portacaval H interposition graft can be considered a real partial shunt, since the immediate intraoperative period.

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**PROPOSED RAT MODEL FOR THE EVALUATION OF THE
INFLUENCE OF pH VARIATIONS ON
HELICOBACTER PYLORI VIRULENCE.**

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Introduction: The correlation between pH, *Helicobacter pylori* (*H. pylori*) infection and gastric damage remains controversial. For this aim the authors investigate the influence of pH-culture variations on *H. pylori* infectivity in a specific animal model. Previous *H. pylori*-associated gastritis candidate animal models have included gnotobiotic piglets, ferrets, and non-human primates. These animal models have been designed with the aim of establishing histologic gastritis that would closely resemble that observed in humans, and they have been shown to be potentially useful studying the animal counterpart of human gastritis. These models however, have proven to be expensive, technically difficult and the availability of the animals has remained a significant problem. To understand how *H. pylori* infects and occasionally causes serious disease a new animal model is based on rats-infection. This model is less expensive and also more easily carried out compared to the other. An important consideration is that the lesion produced by *H. pylori* infection in rats are more histologically similar to the gastric human lesion during by *H. pylori* infection. Another characteristics of this animal model is that the acetic acid-induced ulcers in the rat are similar to human gastric grossly, histologically and ultrastructurally. Furthermore, to our knowledge, the previous animal studies have featured on intact gastric mucosa, and only few studies have been carried out to investigate the role of *H. pylori* in the healing of pre-existent experimental gastric ulcers.

Methods: The authors studied the infectivity of one single strain of *H. pylori* cultured at two different value of pH. 80 male Sprague Dawley rats were randomized in two groups of 40 rats each, the first with surgically produced experimental gastric ulcers, the second with normal mucosa. Seventy-two hours after surgery both groups were subdivided into three subgroups, each submitted to a daily intragastric administration of a different preparation of *H. pylori* (*H. pylori* cultured for one month at pH 3, the same strain cultured at pH 6.7 for one month, normal saline as control respectively). 10 day after the initial surgery all rats were sacrificed and 560 gastric biopsies were obtained, 320 for histological evaluation and 240 for microbiological research.

Results: Our results showed 1) the lesion produced by *H. pylori* infection in rats are more histologically similar to the gastric human lesion during by *H. pylori* infection, 2) the acetic acid-induced ulcers in the rat are similar to human gastric grossly, histologically and ultrastructurally.

Discussion: In our study we investigate the influence of pH-culture variations on *H. pylori* infectivity in a new specific animal model. Previous *H. pylori*-associated gastritis candidate animal have been designed with the aim of establishing histologic gastritis that would closely resemble that observed in humans, and they have been shown to be potentially useful studying the animal counterpart of human gastritis. These models however, have proven to be expensive, technically difficult and the availability of the animals has remained a significant problem. To understand how *H. pylori* infects and occasionally causes serious disease a new animal model is based on rats-infection. Our model is less expensive and also more easily carried out compared to the other. With this rat model we demonstrated: 1) the lesion produced by *H. pylori* infection in rats are more histologically similar to the gastric human lesion during by *H. pylori* infection, 2) the acetic acid-induced ulcers in the rat are similar to human gastric grossly, histologically and ultrastructurally.

Conclusion: Some important questions remain unanswered. What is the association between pH environment and virulence factors of the bacterium?

A significant contribution to the knowledge of the relation between *H. pylori* infection and gastric lesions (inflammatory and neoplastic) could be reached by investigating the correlation between *H. pylori* virulence factors and pH environment.

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**RAT PANCREAS HARVESTING WITH IN SITU PERFUSION.
MICROSURGICAL TECHNIQUE.**

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INTRODUCTION The aim of this work was to demonstrate that Starzl's microsurgical pancreas removal technique produces less ischemic damage to the endocrine tissue during removal and a greater amount of purified tissue, whereas in the traditional removal technique after exsanguination.

MATERIALS AND METHODS We divided our research into two stages, the first involving the removal technique of the pancreas in multiorgan donors, and a second, subsequent stage concerning the purification of the pancreatic islands. Sixty small, male Wistar rats, each weighing about 100 gms were divided as follows: group1) 20 rats used for training in the removal technique; group2) 20 rats undergoing removal after exsanguination; group3) 20 rats undergoing removal after *in situ* perfusion with Belzer's solution at 4°C, by Starzl.

RESULTS Rats not upper 100 gm. weighing will provide a pancreas of about 0.1 gm mean weight; the site of choice for aorta cannulation proves to be the initial portion of the common iliac artery. Finally, in the group of 20 rats undergoing the exsanguination technique, each single pancreas obtained provided fewer than 150 islands with a mean diameter of 100 µm., whereas in the group of 20 rats undergoing the perfusion method, each single pancreas provided from 200 to 300 islands, with a mean diameter ranging from 100 to 200 µm. We must emphasize the importance of this result, since the volume of the islands increases cubically with the increase of its radius. Furthermore, the purity index, verified by means of Dithizone staining, was of 70% in group 1 (exsanguination) and 90% in group 2 (*in situ* perfusion). Finally, the vitality of the endocrine tissue obtained with the exsanguination method was of 70% while that resulting from the perfusion technique was of 90%.

CONCLUSIONS The *in situ* perfusion by Starzl does not cause hot ischemia, moreover, by using Belzer's solution at 4°C, it is possible to reduce the typical degenerative cellular swelling and further improve cell condition; this not only reduces cell metabolism, but also stabilizes the membrane, which is the most important protection barrier against external traumas. In this way, our experimental experience provided us with organs in good trophic condition, and with islands which would not only be ready and able to withstand the aggression of the digestive and purifying processes (Moskalewski 1965), but also the further environmental difficulties of the post-transplantation period (immunologic response, rejection; toxic side-effects of the immunosuppressive drugs involved, such as Cyclosporin A and steroids).

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PEDICLED VERSUS MICROSURGICAL FLAPS IN UPPER AND LOWER EXTREMITY RECONSTRUCTIONS

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Wide specialised tissue loss of upper and lower extremities are a common problem following complex traumas or neoplasm excisions. One of the major reconstructive goals is the coverage of neurovascular bundles or exposed bone occurring after open fractures and/or vascular/septic ulceration. Muscular flaps can manage the feature of several specialised tissue loss, with a strong healthy tissue covering the exposed bone often affected by infection

Several steps have to be followed while choosing either pedicled or microsurgical transfers: in our opinion, the latter has to be reserved to those cases where pedicled flaps are unavailable because of high donor site morbidity.

Successful microsurgery depends on skilled team of well trained surgeons and nurses beside technical equipment.

On the contrary, the outcomes could be unfavourable in surgical and financial point of view because of the needs of surgical revisions or re-operations due to unstable patent anastomosis or emergency salvage surgical procedures. Pedicled flaps are less invasive and less time consuming surgical procedures which expose the patient to minimal risk of flap loss with simple and fast recovery. Planning the surgical strategies, it is critical to promote faster healing with minimal morbidity. Microsurgical transfers are elective in emergency to cover impaired tissue with unclear definition between vascularized and not vascularized ones.

Microsurgery could be also elective in tumor resection where adjuvant therapy has to follow the reconstructive procedures and any major mobilisation of the contiguous tissues should be performed.

In the other cases and whenever possible, we prefer pedicled flaps with less local and distant morbidity.

Following the principles previously described, we performed 24 operations in which different flaps were used.

The paper is a review of the cases with a detailed analysis of the different indications and choices to be done to obtain the best result.

MORPHOLOGICAL AND FUNCTIONAL CHANGES OF RAT AORTA AFTER COLD STORAGE IN U.W. AND CELSIOR SOLUTION

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Introduction. Some reports demonstrated that low-potassium solution are more suitable for short-term storage of blood vessels, as well as for long-term preservation of arteries. Other Authors observed that solutions containing an higher potassium concentration, such as UW, can affect the homeostasis of the vascular tissue, altering the equilibrium among the several vasoactive endothelium-derived substances. Endothelial cells release vasoactive substances exerting major effects on local vasoregulation. Among them, the powerful relaxation of vascular smooth cells and the inhibition of platelet adhesion and aggregation. We investigated the effect of long-term cold storage in high-potassium solution (U.W) and low-potassium solution (CELSIOR), on functional as well as morphologic changes of the rat aorta. **Methods.** Male Wistar rats, weighing 220-240 g, maintained under standard condition

were used in this study. All the animals were anaesthetized by ether inhalation. The in-situ flushing of the thoracic aorta was performed through the abdominal aorta, with 10 ml of cold UW or Celsior solution. The vascular segments were then stored in UW or CELSIOR solution and kept at 4°C up to 72 hours. Circumferential biopsy samples of aorta segments were routinely processed for scanning (SEM) and transmission electron microscopy (TEM). The endothelium-dependent relaxation was evaluated during an organ bath assay, as the acetylcholine-mediated vasodilatation of aortic strips. **Results.** The segments of aorta used as controls produced a contractile response to NE 10^{-7} M of 429 ± 54 mg (mean \pm SE), and 307 ± 16 , after 48 h. The percentages of relaxation to ACH 10^{-5} M of the aorta controls and of the aortic segments after 48 hours of cold storage in UW solution, were $82.2 \pm 2.3\%$ and $65.2 \pm 6.2\%$, respectively. A relaxation-response to nitric oxide (NO) 10^{-6} M was observed in all aorta segments stored, but no for the aorta segments stored in UW solution up to 72 hours. No morphological and functional differences were found in the aorta segments stored in both UW and CELSIOR solution after 48 hours. However, a better morphology and functional responses were observed after 72 hours in the aorta stored in Celsior as compared to UW solution. **Conclusions.** These results suggest that CELSIOR solution is more suitable as compared to UW solution for cold long-term vascular allografts storage intended for transplantation.

HEPATIC FUNCTION AND SURVIVAL AFTER INTERMITTENT ISCHEMIA IN EXANGUINATED RATS

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Introduction Reperfusion injury represent an important problem in case of prolonged continuous clamping (CC). Thus, intermittent clamping (IC) of the hepatic vascular pedicle has been proposed to reduce organ injury. We aimed to compare rat survival, liver function, hepatic lipid peroxidation and hepatic energy level in the specific setting of hemorrhagic shock (HS) in rat exposed to CC or IC. **Methods** HS was induced in male rats by withdrawing blood from IVC until a mean arterial pressure of 40 mmHg was obtained. The rats were replaced with the same volume of saline solution. After 1 hour of spontaneous recover, partial liver ischemia was induced. The ischemia time was 60 min intermittently (30' of ischemia followed by 10' of reperfusion) or continuously. At the end of ischemia the non ischemic lobes were removed. The animals were divided in five groups; Group 1 (n=15): rats with HS only; rats without exsanguination exposed to CC (group 2, n=15) or IC (group 3, n=15); exsanguinated rats exposed to CC (group 4, n=15) or IC (group 5, n=15). Animal survival was assessed at 7 days. After 1 hour of reperfusion 5 animals for each group were sacrificed to obtain blood sampling to determine plasma GPT. Moreover, we have measured the tissue concentration of MDA chosen as index of lipid peroxidation by oxygen-free radicals derived and ATP as index of hepatic energy level. **Results** IC markedly improved the 7-day rat survival when compared to the continuous group (100% vs 25% in the group without exsanguination; 50% vs 0% in rats with HS; $p < 0.01$). GPT levels were significantly reduced by IC in rats without exsanguination as compared to the HS group. No differences were found in the MDA levels at the end of the ischemia time, while, after reperfusion a significant lipid peroxidation occurred in rats exposed to CC, especially in the exsanguinated group. IC at the end of ischemia partially prevented the hepatic energy depletion, but ATP depletion was significantly greater in rats with HS. **Conclusions** During liver resection intermittent hepatic pedicle clamping is better tolerated than continuous vascular occlusion. This procedure is to prefer in the specific setting of haemorrhagic shock too.

Diagnosis and microsurgical treatment of peripheral nerve tumors.**R.GAZZERI, F.Caputi^o, A.Comberiati^o, S.Savino^o**

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Introduction: Peripheral nerve tumors represent a little group of lesions with distinct istopathologic features that make the diagnosis difficult. Sometimes the border between benign and malignant tumors is shaded.

Methods: 17 peripheral nerve tumors from 1990 to 1996 at the S. Filippo Neri hospital neurosurgical division in Rome have been treated.

Results: 16 tumors were benign, only one was malignant. All of them have been operated upon with microsurgical technique.

Discussion: Peripheral nerve tumors can be intrinsic, arising from the nerve sheaths, and extrinsic, arising from adjacent non nervous structures that invade the nerve from outside.

Conclusions: The treatment of choice is total tumor resection with microsurgical technique. These tumors are almost always dissectable from the surrounding healthy tissue without compromising the nerve function.

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PRIMARY VS SECONDARY MICRONEUROANASTOMOTIC REPAIR OF A SINGLE SENSITIVE TRIGEMINAL BRANCH: EXPERIMENTAL STUDY IN RAT

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Introduction. Clinical and experimental studies mainly based on motor function suggest that the results of a primary microneuroanastomotic repair (made shortly after the occurrence of the lesion) are better than those of a later secondary repair. A failure to repair the sectioning of a trigeminal branch leads not only to wallerian degeneration of the peripheral fibres and consequent functional deficit, but also to the central involution of semilunar ganglion cells and their nuclei. The aim of this study was to evaluate the times to functional recovery of a sensitive trigeminal branch (mental nerve) and its ganglial morphological modifications under conditions of primary and secondary repair by means of neurorrhaphy or sensitive and mixed autografts. **Methods.** Thirty inbred Lewis rats (250-355 g) were divided into seven groups. Group 0 (n=4) consisted of syngenic donors of the sensitive and mixed nervous segments for groups 5 and 6; group 1 (n=4) underwent bilateral primary neurorrhaphy; group 2 (n=4) the bilateral harvesting of 3 mm of the mental nerve and its grafting on the contralateral nerve; group 3 (n=4) the bilateral harvesting of 3 mm of the mental nerve and the immediate grafting of mixed segments (3 mm of the common peroneal nerve); group 4 (n=4) delayed bilateral neurorrhaphy 12 weeks after neurotomy; group 5 (n=4) bilateral graft of 3 mm of the mental nerve taken from syngenic donors 12 weeks after the harvesting of a segment of equal length; group 6 (n=4) a 3 mm bilateral mixed graft (common peroneal nerve) taken from a syngenic donor 12 weeks after the creation of an equivalent deficit. Functional recovery was neurophysiologically evaluated (the response to mechanical and electrical surface stimuli) after 7, 14, 21, 28, 35 and 42 days. A histochemical evaluation (retrograde HRP-WGA transport) performed after 42 days provided data relating to both the functional and morphological characteristics of the semilunar ganglion. **Results.** The neurophysiological tests indicated that the times to the return to baseline values were as follows:

group 1; 21 days for all rats; group 2, 28 days for three and 35 for one; group 3, 35 days for all; group 4, 35 for two and 42 for two; group 5, 35 days for three and 42 days for one; group 6, 35 days for three and 42 days for one. The morphological evaluation did not reveal any major differences in shape, number or position between the treated rats and the data previously obtained from four normal rats; the only difference was a slight increase in cyton volume during the regenerative phase as a result of increased metabolism.

Discussion and Conclusions Our results suggested that neurorrhaphy leads to a more rapid recovery only if it is performed immediately after the primary lesion. In the groups with primary grafts, those using sensitive nerves gave the best results; there were no differences worthy of note between the secondary repair techniques. Trigeminal ganglion cells preserve their regenerative capacities for a long time after lesion. It is sufficient to recreate a correct connection between the two stumps of the damaged nerve in order to ensure an acceptable recovery of sensitivity regardless of the technique used.

EXPERIMENTAL MODEL OF HEALING IMPROVEMENT IN LARGE BOWEL ANASTOMOSIS USING L-CARNITINE: PRELIMINARY RESULTS.

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INTRODUCTION: In previous studies we have demonstrated the different biochemical behaviour (1) and contractile activity (2) in the large (LB) vs small (SB) anastomized rabbit bowel. The aim of this study is to evaluate the benefit of the use of the L-carnitine like oxidative phosphorylation modulator in the healing of colonic anastomosis. **MATERIAL AND METHODS:** In 50 male rabbits (two groups: A - n=25 - and B - n=25 -) under general anesthesia the ileum and colon were transected always on the same side and an end-to-end anastomosis was constructed using a single-layer inverting interrupted 5/0 suture, antibiotic prophylaxis was performed by ceftazidime (100mg/kg/die i.m.), and analgesia using buprenorphine chloride (0.06mg/die i.c.) during the first 3 postoperative days. In group A, L-carnitine was administered by diet (60 mg/kg/die) during pre- and postoperative period, in the second group no L-carnitine was supplied by diet. Tracts containing bowel anastomosis were collected at 3, 12, 24 h and at 3, 7 and 21 days after the operation and compared to the non-anastomosed bowel (sham-operated rabbits). Respiratory rates with different substrates, enzymatic activities, respiratory complex structures and cytochrome contents were measured in smooth muscle purified mitochondria after the scraping of the mucosa and serosa; ileal and colonic contractile activity were measured by basal and stimulated (Ach) conduction. **RESULTS:** Preliminary results seem to show a significant improvement of biochemical and contractile activities in group A vs group B. **DISCUSSION AND CONCLUSION:** From this preliminary study the use of L-carnitine seems to improve the healing of large anastomized rabbit bowel. If the definitive results confirm these thresholds, a controlled clinical trial in human could be started.

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ANIMAL WELFARE AND DISTRESS IN THE SURGICAL EXPERIMENT: INFLUENCE ON THE EXPERIMENTAL PROCEDURE AND INTERFERENCES WITH THE RESULTS

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In the biomedical research, in these last 10 years, the utilization of the laboratory animals enjoyed of an improvement in the biological knowledges, in the management and breeding, in the prevention and treatment of pathologies and in the experimental procedures. The science that studies the characteristics and the behaviours of the laboratory animals helps the researchers in the correct use of these one in order to gain data and information's the most possible objective and reproducible. In fact the principal goals of this knowledge are the wellness of the animals and the quality of the experiments. The welfare condition, the positive and negative stress (eustress and distress) of the animals are more often evaluated in the experimental protocols. The welfare condition, the balance of the psychophysical state of the animals, must be based either on the anatomophysiological and comportamental characteristics of every species either on external and internal ambiental interactions.

The variations of this homeostatic state can cause either eustress, when it's possible to face the spurs and rejoice at this, or distress, when the spurs is exceeded causing severe consequences for the psycho-physic conditions. This is possible because of a tight linkage between the regulation systems of the organisms (neuroendocrinal and immunological systems) and the ambiental stimuli. It's also basic consider the duration of the stressogenous spurs in order to distinguish in acute and chronic stress. Since every procedures in an experimental protocol could be seen as a stressogenous experience, they must be carried out following definitive highlines; so it's important to take care in the handling, in the assistance and in the holding of the animals (for example in the drawing out from the gage).

Obviously the surgical protocols cause severe distress levels, much more than other experimental sciences (Pharmacology and Toxicology). In fact, especially in the pre-operative period (handling, anaesthesiological procedures, vessel cannulization, reawakens and first post operative day), the animals feel pains and sufferings. To better understand to prevent the possible negative interferences in the results of a protocol there are some "welfare indicators": productive signs; pathological signs; physiological signs; behavioral signs. For each of these groups there are clinical signs and valuable stressogenous parameters (i.e. piloerection, weight loss, asthenia, etc.).

However it's possible to prevent or at least to reduce the influences on the procedures, and so the interferences with the results, following what the present knowledges of the science of the laboratory animals suggests:

- wide knowledges of biology, ethogramme and characteristics of each species;
- careful study of the experimental protocols;
- the best handling, assistance and holding of the animals;
- operators training (Researchers, handlers and technicians).

General Surgery (Session 1)

PALLIATIVE APPROACH TO RECTAL CANCER: OUTLOOKS AND LIMITS OF ND-YAG LASER PHOTOCOAGULATION. A COMPARISON WITH COLOSTOMY.

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INTRODUCTION. In 2-5% of patients with rectal cancer, radical resection is impossible or not advantageous owing to cost/benefit ratio. A palliative

procedure is necessary in the most part of these patients because of the presence of symptoms like intestinal occlusion, hemorrhage, tenesmus and mucorrhea. Palliative resections and colostomy are the most frequent operations, but high mortality (5-10%) and morbidity (10-20%) are reported; moreover, quality of life after these procedures is too often unsatisfactory. The aim of this study is to evaluate an alternative treatment such as ND YAG laser photocoagulation, compared with colostomy. **METHODS.** We considered 29 patients (M/F R=18/11; mean age 74 years), with not resectable rectal cancer in a period between 1991 and 1998. The malignancies were not resectable for extended loco-regional involvement in 6 cases and in 5 cases owing to spread metastases; high pre-operative risk was present in the other 18 patients because one or most diseases were associated to neoplasm. In all patients it would be possible to perform a colostomy like elective procedure. In 20 specimens the carcinoma narrowed rectal lumen resulting in alterations in bowel habits: anyway, only 1 patients was admitted for intestinal obstruction and an emergency surgical treatment became necessary. Other clinical features in these patients were represented by hematochezia, tenesmus and perineal pain. In the remaining 6 cases, macroscopic finding was an ulcerative and/or vegetant mass and symptoms were hematochezia, diarrhea/mucorrhea and tenesmus. All 29 patients were also divided in two different groups on the basis of the received treatment: in 21 of them ND-YAG laser photocoagulation of the tumor was performed (group A), while the remaining 8 underwent a surgical procedure represented by a colostomy (group B). This selection was performed after that every patient gave his preference to one or other procedure, both explained by an outside surgeon. Two groups achieved were comparable for age, sex, associated diseases, extension, morphology and grading of the tumor. **RESULTS.** The mean survival of 8 patients, that underwent a colostomy, was 7.9 months. 5 of these died of spread metastases or of associated diseases. The colostomy made it possible the resolution of intestinal obstruction, but not of other clinical features such as tenesmus, and mucorrhea. In 1 case the recurrence of frequent episodes of hemorrhage 2 months after the intervention made necessary some sessions of laser photocoagulation. 3 patients had a complication in the post-operative period: in 2 cases it was a suppuration of the wound and in one patient the complication was a leakage of colostomy. So, total morbidity was 50%. Nobody died before 30 days after operation. The mean length of hospitalization was 20 days for this group. The mean survival of group A patients was 8.4 months. Nowadays only 8 of these are alive. Laser photocoagulation caused a total remission of symptomatology. 2 patients needed a colostomy 6 months later first session owing to impossibility to control the neoplastic growth that caused an obstruction. Minor complications of laser treatment were 2 cases of arrhythmias. Overall morbidity was 11% and no one died in post-operative. The period of hospitalization was about 13 days long. **DISCUSSION.** Altogether, laser photocoagulation caused remission of the symptoms in 16 patients with a morbidity of 11%. Our results are similar to the data reported in other series. In our experience, ND-YAG laser treatment is certainly more desirable than colostomy. In fact the methodic is easy to carry out in the most patients, anesthesia is not necessary, morbidity is lower than in colostomy (11% vs. 50%), although survival is about the same; in the end, the period of hospitalization is shorter (13days vs. 20). Moreover colostomy represents an invalidant sequel on social and psychological plane. **CONCLUSIONS.** Because of in 2-5% of patients a radical intervention for rectal cancer is impossible or disadvantageous and the surgical palliation is burdened by high morbidity and mortality, surgeon turns his interest to not operative treatment. We consider ND-YAG laser photocoagulation a valid alternative to surgery because of low morbidity and mortality and good quality of life.

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LOCAL ANESTHESIA PROTOCOLS IN ANORECTAL SURGICAL PROCEDURES: FIVE YEARS EXPERIENCE

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Introduction

During common proctologic practice a lot of the most frequently encountered disturbances can find adequate surgical treatment under local anesthesia protocols. This, together with the shortage of hospitalization time, could significantly contribute to a cost-controlling policy. Our experience in performing several surgical procedures under local anesthesia alone is outlined in this paper.

Methods

From 1993 to 1998 we operated on 314 patients previously observed during our office proctologic activity. Surgical operation carried out are listed below:

<i>Procedures</i>	<i>N° cases</i>	<i>%</i>
Hemorrhoidectomies	148	47.1
Anal sphincterotomies	114	36.3
Rectocele (plasties)	13	4.1
Vaporization of anorectal lesions	5	1.6
Abscesses and fistulas	26	8.3
Local resection of rectal neoplasm.	8	2.6
Total	314	100

A pharmacological preparation preceded the operation in all cases which consisted of atropine, opioids and neuroleptic agents. Local anesthesia was performed by means of a multinjector device (quadriject, Sapimed, Alessandria, Italy). During the first period mepivacaina plus Sodium Bicarbonate was used, lately pure ropivacaina 10 mg/ml is adopted. In the last two years a preoperative local application of mepivacaina cream was added.

Results

Vagal symptoms appeared during the surgical procedure in 28 cases (8.9%), in no cases interrupting the operation. In 6 patients (1.9%) urinary symptoms appeared postoperatively (temporary catheterization). No significant complications were noted. Moderate use of pain medications was noted during the first 6 postoperative hours. Patients' expectations were generally fulfilled.

TREATMENT OF ADVANCED HEMORRHOIDS BY CLOSED STAPLED TECHNIQUE: OUR EXPERIENCE

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Introduction

A number of surgical techniques are available at the moment to treat high degree hemorrhoid disease. Although reliable and well experienced most of those techniques imply a long and less than comfortable healing process. On this basis since 1997 we started applying the new closed stapled hemorrhoidectomy proposed by A. Longo. In this paper we relate about our experience on the subject.

Methods

Since June 1997 we selected all hemorrhoid cases in which a significant degree of mucosal prolapse was visible. Till December 1998 we collected a 58 patients' group. All the operations were performed in prone position under local anesthesia alone. The purse-string suture was always single. Mucosectomy was obtained by means of CDH 33 (Ethicon) and CEA Premium plus 34 (Autosuture) staplers.

Results

Since the first performed procedure we noted a very good patients' acceptance.

During the suture inspection performed at the end of the procedure we noted a slight hemorrhage and successfully corrected it by means of a single sitch in 3 cases (5.2%). Urinary postoperative catetherization was necessary in 4 cases (6.9%). Post-operative hemorrhage occurred in 1 case (1.7%) 6 hours after the operation and required surgical hemostasis. Pain medication were assumed post-operatively by the largest part of the patients but only 3 of them assumed medication in the first post-operative day. In 1 of the first 20 patient's group a slight anal stenosis appeared at a 3 months distance from the operation and was controlled with anal dilators. No incidence of anal incontinence was noted. During the actual follow-up time (1 to 18 months) no recurrences occurred.

Conclusions

Definitive conclusions require large data collections not available yet. The technique appear to be reliable and easy to perform. Provided the suture is placed at the right level no significant complications are to be feared. Moreover patients' response is enthusiastic.

OUTLET OBSTRUCTION AS A CAUSE OF CHRONIC CONSTIPATION: SURGICAL TREATMENT

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Introduction

In cases of serious constipation, surgical therapy represents a controversial issue. In particular, when constipation is attributed to the presence of outlet obstruction -although significant efforts have been made in the last few years to exactly identify the obstructing mechanisms- still a good deal of confusion exists. This paper reports our results in the treatment of a few cases of obstructing defecation observed during our current colonoproctological practice.

Methods

Our patients' group consists of 16 cases. All of them complained of serious constipation and obstructed defecation. A thorough diagnostic protocol was carried out in all patients which included colonic transit times, defecography, anal manometry, dynamic anoscopy. All cases in which slow transit constipation or spastic pelvic floor syndrome were suspected, have been excluded. In 11 cases a significant rectocele was found. It was surgical corrected by a transanal rectal plication (Block operation). In 6 patients intraanal rectal intussusception was suspected by defecography and dynamic anoscopy. These patients underwent a stapled circular mucosectomy. In 1 of those cases a double purse string suture was necessary. All the operations were performed under local anesthesia alone. The patients were discharged from the Hospital during the 1st postoperative day.

Results

No relevant complications were noted. In the only one case of double purse-string suture the proximal one was retained and had to be removed during the 1st p.o.day. After the "Block" operation an immediate clinical improvement was observed that was confirmed by defecography. Nevertheless, in 5 patients defecation difficulties recurred after an average period of 24 months; one of them was subsequently submitted to stapled mucosectomy with satisfactory result. Among the 5 remaining cases who underwent stapled mucosectomy, 4 reported a good clinical result. In 2 cases defecation activity was referred as invariate from the patients.

Conclusions

We considerate our results encouraging. Our data are too preliminary to draw definitive conclusions. We are planning to collect more cases in the future.

SURGICAL TREATMENT OF ANAL FISSURES UNDER LOCAL ANESTHESIA

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Introduction

Actually successful treatment of anal chronic fissures is not only obtained by surgical approach, since several methods have been recently proposed. Nevertheless our group still suggest surgical therapy to patients affected by this disease. Our experience during a 5 year period is reported in this paper.

Methods

From our proctological practice 114 patients complaining of chronic or recurrent fissures were selected during a 5 year period. Each patient was submitted to a diagnostic protocol including anoscopy, rettosigmoidoscopy and evaluation of anal pressure. This was obtained by electromanometry during the first two years and subsequently by digital estimate -constantly performed by the same operator (MB)-. Anal sphincter spasm was found in 104 cases (92%). All of them underwent closed lateral sphincterotomy performed under local anesthesia. In 10 cases anal sphincter pressure was normal. Five of them were recurrent cases, 1 had been previously operated by our group (closed sphincterotomy) and 4 recurred after open procedures performed elsewhere. In those cases a posterior anoplasty procedure under local anesthesia was carried out. All patients were discharged from the hospital in the 1st postoperative day.

Results

No serious complications were observed. No anal incontinence was reported. In 1 case (0.9%) a slight postoperative hemorrhage was treated conservatively. In 10 cases (8.8%) postoperative anal hematoma was noted but required no treatment. Only 1 recurrence was observed during the follow-up time (6 to 60 months).

Conclusion

Data coming from this type of operation are to be consider absolutely preliminary. Our experience, together with other reported series, seem to be granted with positive results. A larger data collection and a longer follow-up are advisable to draw definitive conclusions

COMBINED TREATMENT OF HEMORRHOIDS BY RUBBER BAND

LIGATION AND SCLEROTHERAPY: OUR EXPERIENCE

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Introduction

A number of ambulatory procedures has been developed in recent years to treat hemorrhoids. Since a few years ago we adopted the combined rubber band ligation and sclerotherapy technique. This paper reports our data coming from our office experience during a 5-year period.

Methods

Since 1993 we selected low grade hemorrhoidal cases from our current proctological practice, to be treated on an office basis. Our group consist of 227 patients (164 males and 63 females). Clinical examination and subsequent anoscopy and rectosigmoidoscopy were performed in all patients. Treatment was postponed in case of anal spasm or concomitant anorectal disease different from hemorrhoids. Hemorrhoid classification was based on anoscopic evaluation and resulted as follows: I, 75 cases (33%); II, 100 cases (44%); III, 47 cases (21%); no IV degree cases were included. Five patients already operated elsewhere were observed (recurrences). An oral

antibiotic preparation therapy and small enemas were given to the patients before the treatment. The procedure was performed in Sim's position. Disposable anosscopes (selflight, Sapimed, Alessandria, Italy), suction ligators and silicone rubber bands were used. Only one hemorrhoidal pedicle was treated at each time; intersession pause was of 15-21 days. An average of 3 sessions per patient was carried out. No anesthesia was necessary

Results

Good results were obtained in 219 cases (96,5%). In 8 patients (3,5%), classified as III degree circumferential cases the treatment failed to obtain satisfactory results and open surgery was necessary. Fifteen patients (6,6%) complained about post-treatment mild pain easily controlled by current drugs. Side hemorrhoidal thrombosis was observed in 7 patients (3,1%), possibly as a consequence of sclerotizing fluid extravasation. Hospital admission was necessary in 1 case due to significant pain and observed mucosal necrosis; medical therapy and band removal solved the matter. During the 6-60 months follow-up period no recurrences were observed.

OUR EXPERIENCE IN THE TREATMENT OF SINUS PILONIDALIS.

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Introduction. Sinus pilonidalis is a lesion characterized by the presence of a dysembriogenetic cyst, sometimes suppurated, positioned between the skin and the presacral fascia. It is generally median but frequently many lateral branches are present. Etiology of this disease has not been determined but prolonged local irritations, an excessive sudoration and long trips are factors predisposing to this pathology. Risk factors are sex (M:F=4:1), irsutism and a fatty skin. Many therapies has been proposed: Basso performs a conservative treatment based on a local injection of phenol, referring good results in the 58% of his patients. We consider that surgery is the only radical therapy. Many techniques have been performed. There are closed techniques with a recurrence rate varying from 4 to 25%. This technique could be performed with or without a cutaneous flap and a cutaneoplasty. Open techniques have a recurrence rate varying from 0 to 12% and a median healing time of 6-8 weeks. The last class includes marsupialization of residual cavity after the excision of the sacral fistula. **Methods.** At the I Surgical Clinic, University of Turin, from January 1992 to December 1998 were treated surgically 166 patients (129 M and 37 F) affected by sinus pilonidalis. Median age was 22 years (range 12-60 years) 149 patients were submitted to an outpatient procedure in local anesthesia and 17 patients were treated in operating room in general or spinal anesthesia. All patients were positioned prone. Frequently we used injection of metilen blue in order to have a correct visualization of all fistulous tracts. We used open technique in 110 patients (66.26% of cases) marsupialization in 35 patients (21.08% of cases); in 19 cases (11.4%) we used a closed technique and only in 2 cases (1.2%) we performed a "Z anoplasty". **Results.** We observed a precece complication in the 6.6% of cases (11 patients) and were all characterized by the presence of an hemorrhage. We treated all patients conservatively, without a blood transfusion or a recovery. All patients were visited after 3, 7 and 15 days after surgery, and then they were followed every 15 days until the complete closure of surgical wound. After a median follow up of 10 months we observed a complete healing in 149 patients (89.7%) and a recurrence rate of 10.3% (17 cases: 7 with closed technique; 6 with marsupialization; and 4 with open technique). **Conclusions.** In conclusion we suggest that radical therapy of sinus pilonidalis is surgical and the open technique is the one which guarantee the lower rate of recurrences. Thus marsupialization permits a good recurrence rate with a faster return to work.

STAPLER HAEMORRHOIDECTOMY: OUR EXPERIENCE.

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Introduction. Haemorrhoids (Haem) are a frequent pathology and many treatments have been advocated. Classification of Haem is based on the four classical stages: I degree includes internal nodes; II degree internal nodes that protrude at the time of bowel movement but reduce spontaneously; III degree considers Haem. which protrusion requires manual replacement, and finally we have IV degree when haemorrhoidal prolapse is irreducible despite attempts at manual replacements. We use to treat only symptomatic ones. In Haem associated to an important prolapse we actually use a new technique: the circular stapler prolassectomy proposed firstly by Dott. Longo. The aim of this procedure is to restore usual topographic relationships between anal mucosa and sphincters. The respect of sensitive anal region permits an almost painless postoperative period. Another important aspect of this treatment is the interruption of terminal branches of superior haemorrhoidal vessels. Based on this principles stapler prolassectomy permits the reduction of the prolapse and improves venous flow of haemorrhoidal plexus, that also guarantee postoperative reduction of external skin tags. We suggest some important technical notes: anal suture must be performed 3-4 cm. above dentate line; before the closure of circular stapler is important to perform a small traction on the stapler in order to obtain a correct contact between the pursestring suture and the head of the stapler; during the closure of the stapler and its stapling is important to maintain the stapler in axis with anal canal to avoid an asymmetric resection of prolapse and the inclusion of muscular tissue in the suture with possible problems in fecal continence. **Methods.** At the I Surgical Clinic Department, University of Turin, we performed this technique in 30 pt. (22 males and 8 females) during 1998. Mean age was 56 years (range 33-84); 6 pt. had a II haemorrhoidal degree; 14 pt. a III degree; and 10 pt. a IV degree. All pt. were previously treated with drug and diet. 6 pt. were submitted to a general anesthesia, and the others to a peridural procedure. All pt. were in gynaecological position on operating table. We observed an i.o. hemorrhage in 10 pt., treated with an haemostatic suture in Catgut. In 1 pt. we performed also a lateral internal sphincterotomy for an anal fissure and in 2 pt. an exeresis of voluminous skin tags. **Results.** In all pt. we observed a complete disappearance of haemorrhoidal prolapse and an almost complete reduction of external component. Postoperative pain was negligible and we prescribed only minor analgesics in all pt. except 1 who felt a great pain for some days, probably related to a low suture involving the dentate line. Mean operative time was 15 minutes. No recurrences were observed. **Conclusions.** In conclusion we suggest that circular stapler prolassectomy could be considered the treatment of choice in treating Haem associated with an important prolapse. Only a correct follow up will confirm these results and if stapler prolassectomy could be the gold standard in the treatment of Haem.

**OUR EXPERIENCE WITH OUTPATIENT
 HAEMORRHOIDECTOMY.**

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Introduction. Haemorrhoids are the most frequent disease seen in a Coloproctological Unit and many factors are advocated in their aetiology and in their treatment. We suggest that only symptomatic haemorrhoids should be treated. Treatment could be conservative or surgical and, in our experience, is guided by the world-wide accepted classification based on 4 stages. In IV and III degrees surgical treatment is advocated. In fact surgery is the most radical treatment and presents a low incidence of recurrences and complications. Economic policy and long waiting lists induced our Department to perform an outpatient procedure. **Methods.** At the I Surgical Clinic, University of Turin, from January 1989 to December 1998 were visited 2307 patients suffering from haemorrhoids. 1473 (63,85%) of these patients were treated with conservative therapy or with minor operative procedures

like rubber band ligation, that we consider the treatment of choice between "alternatives" procedures. 834 patients (36,15%) were treated surgically: 353 patients (42,3%) were submitted to surgery in operating room, while 481 patients (57,6%) were treated as an outpatient procedure. We performed the Milligan Morgan technique in almost all patients. All outpatient procedures were performed in local anesthesia. Lidocaine 2% was the anesthetic of choice in the 87% of patients. and rarely was used Marcaine or Bupivacaine. The injection of anesthetic was performed in intersphincteric space and subcutaneously. All patients were located in left lateral position. We excluded from this procedure patients affected by psychiatric diseases, coagulopathy, major disorders of heart, kidney, liver, lung, metabolic disorders, obese; patients with referred episodes of allergy to local anesthetics and patients with a great complete circumferential haemorrhoidal prolapse. All patients treated were studied preoperatively with a proctological visit, a rectoscopy or a colonoscopy; an E.C.G. and an hematological screening. **Results.** No mortality was observed. Complications occurred were: haemorrhage in 6 patients (1,2%); urinary retention in 4 patient (0,8%) and an abscess in 1 case (0,2%). We don't consider pain a real complication and was treated in all patients with oral or i.m. minor analgesics. Healing in all patients occurred within 35-45 days after surgery. **Conclusions.** In conclusion we consider outpatient haemorrhoidectomy as the gold standard in treating haemorrhoids in selectioned patients, considering its radicality, the low incidence of complications, associated with an important reduction of costs.

**PYOGENIC GRANULOMA OF THE RECTUM: CLINICAL
 FEATURES OF A CASE**

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INTRODUCTION: The pyogenic granuloma is an extremely rare clinical entity in the gastrointestinal tract except for the oral cavity. One case of rectal polypoid growth with sessile configuration, with the histologic appearance of the pyogenic granuloma is reported.

PATIENT: A 30 years old male was referred at our institution for the recurrence of a piogenyc granuloma of the rectum, first treated in another institution. The patient complained of rettorrhagia since about 8 years. When he underwent his first colonoscopy three vegetating neoformations in the first 6 cm above dentate line were observed, the major of which 3-4 cm. in diameter. Histologic examination showed vascular lesions whith the appearance of piogenic granuloma of the rectum. Abdominal and pelvic TC examination showed a thickening of antero-lateral rectal wall and absence of adenopaties and abdominal organ lesions, while rectal MRI examination employing endorectal coil showed the presence of three endorectal polipoid lesions, not reaching the muscular wall and showing an hyperintensity of signal in T2 weighted sequences, of cistic appearance, at the head. One lymphonode 1 cm in diameter was apparent in left pararectal position. The lesions have been removed with a trans-rectal excision, in another Institution, with dissecting the larger lesion from the muscular wall which appeared to be intact, and suturing the mucosal wall. A recurrence of tenesmus and mucous diarrhea occurred after 1 year from the operations and he was admitted at our Institution in June 1997. Colonoscopy showed the recurrence of a lesion in the rectal anterior wall, 8 cm from anal verge, 2 cm of diameter. Removal was performed with transanal endoscopic micro-surgery (TEM), with a full-thickness excision reaching perirectal fat, with suture of lesion in PDS in single layer. Pathological examination showed the same picture than at the first operation. After TEM no recurrence was showed at 12 months follow-up but the patient complained of mucous prolapse, requiring a stapled prolassectomy with circular stapler 9 months after TEM operation. **DISCUSSION AND CONCLUSION:** Our case of pyogenic granuloma of the rectum highlights the risk of recurrence of such lesions, which needs to be removed with a full-thickness excision.

RADICAL LEFT COLECTOMY FOR CANCER WITH PRESERVATION OF ASSIAL PATTERN

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Introduction: routine treatment of left colon cancer is left colectomy with high division of inferior mesenteric artery (IMA). We demonstrated that preservation and peeling of IMA reduces anastomotic dehiscence risk due to ischemia when adequacy of the rectal stump perfusion may be critical because of atherosclerotic disease or anatomical abnormalities (1). In this study we investigated the quality of lymph-node dissection during this procedure by histological assessment on operative specimens to demonstrate that peeling of IMA is oncologically correct and safe in selected patients.

Materials and methods: Fortyfour consecutive patients (mean age of 68 ys), divided into two groups (group I= 24 and II=20), underwent left colectomy with dissection of regional lymphnodes. In patients of group 2 preservation and peeling of IMA was obtained. The dissection and peeling of IMA was performed according to the technique described by P.Valdoni in 1960 (2) using a periadventitial plane, starting from the aorta and following IMA downward to superior rectal arteries. Hystological examination was performed on colon and mesenteric specimens.

Results: The mean operative time was 160 minutes (min 140-230) without significant difference between the two techniques. Histological assessments showed that six patients had Dukes A cancer (2 in group I, and 4 in group 2), 15 patients had a Dukes B cancer (9 and 6 respectively) and 23 had a Dukes C cancer (13 and 10 respectively). 21 cases were without node metastases and 23 cases were positive for node metastases. 14 patients (8 in group I, 6 in group II) had only perirectal or pericolic metastases, 6 patients (4 in group I, 2 in group II) had intermediate but not main node metastases, and 3 patients (1 in group I, 2 in group II) had main node metastases (lymphnodes harvest was classified according to Japanese General Rules for Clinical and Pathological Studies on Cancer of the Colon, Rectum and Anus), without significative positive lymph-node differences between Dukes C patients of the two groups ($p < 0.05$).

Discussion and conclusions: These findings indicate that lymph-nodes dissection with preservation and peeling of IMA can be considered a curative procedure and a correct alternative therapy for selected patients in the treatment of colon cancer.

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Colorectal-cancer : lymphnodal involvement and survival

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INTRODUCTION: Colo-rectal carcinoma is the second tumor for frequency and mortality, respectively after lung cancer in male and breast cancer in female. Aim of this study was to evaluate the influence exerted by different neoplastic-related variables on survival with particular attention on the number of involved lymphnodes. **MATERIALS AND METHODS:** 205 patients (103M and 102F) affected by colo-rectal cancer who underwent a surgical treatment between 1986 and 1998, have been included in this study. The median age was 64,5 years in both groups (range 29-91 years). In 45 pts. (19M, 26F) the carcinoma was in the right colon: all patients underwent a right hemicolectomy with lymphadenectomy enlarged to the superior mesenteric artery. Patients affected by transverse colon cancer were 9 (4 males and 5 females). In 61 patients (32M and 29F), the localization of the tumor was in the left colon. The latter underwent a left hemicolectomy with ligation of the inferior mesenteric artery at the origin and aorto-caval and lombo-iliac lymphnodal depouillage. Localization in the rectum was found in 90 patients (49M and 41F); among these, 36 underwent a low anterior resection, 25 an ultra-low anterior resection; in 26 a Miles intervention and in 2 pts. a Hartmann operation were performed. In 1 patient a total proctocolectomy with the confection of a pouch was performed, being affected by an ulcerative colitis. In all the latter patients we have made an aorto-caval and lombo-iliac lymphadenectomy with a high ligation of the inferior mesenteric artery. **RESULTS:** We evaluated the survival to December 1998, considering that 5 pts. died in the postoperative period (1 for a hepatorenal syndrome, and 4 for a myocardial infarction. Regarding to the grading, survival percentages were 76,47% for G1, 66,98% for G2, 50% for G3. With reference to Dukes staging (modified sec. Astler and Coller), the survival percentages were as follows: A 100%, B1 85,71%, B2 83,05%, C1 78,57%, C2 51,72% and D 19,05%. The lymphnodal involvement was negative in 134/205pts. (65,36%), and positive in 71/205 (34,63%). The survival percentage was 77,23% in pts. with negative lymphnodal involvement, vs 50% in pts. with positive lymphnodal involvement. Correlating grading and lymphnodal involvement, only 6,1% of pts. with G1 showed a lymphnodal involvement; the percentage raised to 38,7% in G2 and to 50% in G3, thus revealing that the progressive loss of differentiation of the tumor increases the probability of lymphatic diffusion. By crossing grading and lymphnodal diffusion with survival, we achieved the following results: G1 neg 100%, G1 pos 77,42%, G2 neg 76,92%, G2 pos 51,22%, G3 neg 80%, G3 pos 20%. It appears that lymphnodal involvement rather than grading could influence more significantly the prognosis. Eventually, we evaluated the influence exerted by the number of involved lymphnodes on the survival with the following results: 1 lymphnode 85.71%, 2 lymphnodes 50%, 3 lymphnodes 33,33% and >3 lymphnodes 28,57%. It is really evident the decrease of survival percentage with the increase of the number of involved lymphnodes. **CONCLUSIONS:** Lymphnodal diffusion seems to be much more important for the prognosis, rather than grading. Very interesting appears the correlation between number of infiltrated lymphnodes and survival: the latter, in fact, decreases to the increasing of number of involved lymphnodal groups. The absolute role of lymphadenectomy seems to be the one of a better staging, aimed to the evaluation of survival and the pharmacological management in this group of patients.